

Work Order ID 135482

Wednesday, August 12, 2015 4:30:32 PM

135482

Page 1

Item ID: DSK076

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: D2891-1 Turning Detail

Start Date: 8/12/15

Start Qty: 5.00

5

Cust Item ID:

Required Date: 8/12/15

Req'd Qty: 5.00

5

Customer:

Reference:

Approvals:

Process Plan: MLJ

Date: AUG 14 2015

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

DSK076

Rev A

100

100

Doosan

Doosan Lathe

DOOSAN LATHE

Memo

Turn blank for as per Folio FA046
DT8671

0.00

0.00

12

Ø

DAS
40
9-89

15/08/24

110

110

QC

Quality Control

QC2- Inspect parts off machine FAI/FAIB

Memo

0.00

0.00

12

Ø

DAS
40
9-89

15/08/24

120

120

QC

Quality Control

QC8- Inspect parts - second check

Memo

0.00

0.00

12

Ø

DAS
14
9-89

15/08/25

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width: 100%; border: none;"> <tr> <td style="width: 15%;">Skid-tube ☐</td> <td style="width: 15%;">Cross tube ☐</td> <td style="width: 15%;">Water Jet ☐</td> <td style="width: 15%;">Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐																						
Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐																						
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐																						
Large Fab ☐	Composite ☐	Supplier ☐																							
Date :		Step #:		QTY Effective :			MRB (QS1042) Approval																		
Description Work Order Deviation				Disposition				Completed By																	
								Lead hand / Supervisor Approval Verification																	
								QC / QA Coordinator Approval																	
Root Cause		FAULT CATEGORY																							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐																				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐																				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐																				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐																				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐																				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐																				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐																				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐																				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐																				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐																				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____																							
Misidentified ☐	Past Due ☐																								

Work Order ID 135482

Wednesday, August 12, 2015 4:30:32 PM

135482

Page 2

Item ID: DSK076

Accept

N900040100

Setup Start

NS1

Revision ID:

Item Name: D2891-1 Turning Detail

Stop

NS2

Start Date: 8/12/15 Start Qty: 5.00

5

Cust Item ID:

Required Date: 8/12/15 Req'd Qty: 5.00

5

Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

130

130

Packaging

Packaging

0.00

Memo

0.00

LOCATION: MAT060

DAS
14
9-89

15/08/25

140

140

QC

QC21 - Final Inspection - Work Order Release

0.00

Memo

0.00

Quality Control

ML5

AUG 25 2015

501 20150825

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐							
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval				
Description Work Order Deviation				Disposition				Completed By			
Root Cause				FAULT CATEGORY							
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐		No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐		Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐		Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐		Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐	
OTHER : _____											

Picklist Print

Wednesday, August 12, 2015 4:30:32 PM

Page 1

Work Order ID: 135482

135482

Parent Item: DSK076

DSK076

Parent Item Name: D2891-1 Turning Detail

Start Date: 8/12/15

Required Date: 8/12/15

Start Qty: 5.00

Required Qty: 5.00

Comments: IPP rev A. 08.03.13 new issue EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D6104-003

Manufactured No

Each

15.0000

5

D6104-003

15/08/24

DAS
40
9-89

Round Billet, 17-4

Location

Loc Qty

Loc Code

MAT043

15

→ 133505

15

12

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : ☐					

DART AEROSPACE LTD		Work Order:	135482
Description: Turning Detail for D2891-1		Part Number:	DSK076
Inspection Dwg: DSK076	Rev: A	Page 1 of 1	

FIRST ARTICLE INSPECTION DIMENSION SHEET

☒ First Article ☐ Prototype

				Record Actual Dimensions				
Dim	Min	Max	Go/No Go Gauge	1	2	3	4	5
Lathe Section								
A	2.274	2.279		2.275	2.274	2.274	2.276	2.276
B	3.702	3.722		3.713	3.716	3.715	3.715	3.714
C	2.564	2.584		2.573	2.572	2.573	2.572	2.572
D	0.718	0.738		.725	.725	.725	.725	.725
E	0.090	0.110		.100	.100	.100	.100	.100
F	2.464	2.484		2.471	2.466	2.469	2.469	2.469
G	2.029	2.049		2.035	2.035	2.037	2.037	2.039
H	2.964	2.984		2.972	2.972	2.974	2.972	2.972
I	0.913	0.933		.923	.923	.923	.923	.923
J	0.022	0.042		.032	.032	.032	.032	.032
K	0.090	0.110		.098	.096	.098	.097	.097
L								
M								
N								
O								
P								

Measured by:	DAS 40	Date:	15/08/24
Audited by:	9-89 DAS 14	Date:	15/08/25
Prototype Approval:		Date:	

Rev	Date	Change	Revised by	Approved
A	08.04.22	New Issue	KJ/JLM	

DART AEROSPACE LTD		Work Order:	135482
Description: Turning Detail for D2891-1		Part Number:	DSK076
Inspection Dwg: DSK076		Rev: A	Page 1 of 1

FIRST ARTICLE INSPECTION DIMENSION SHEET

☒ First Article ☐ Prototype

				Record Actual Dimensions				
Dim	Min	Max	Go/No Go Gauge	16	17	18	19	20
Lathe Section								
A	2.274	2.279		2.278	2.275	2.275	2.275	2.275
B	3.702	3.722		3.715	3.712	3.712	3.712	3.712
C	2.564	2.584		2.572	2.574	2.573	2.572	2.572
D	0.718	0.738		.725	.725	.725	.725	.725
E	0.090	0.110		.100	.100	.100	.100	.100
F	2.464	2.484		2.468	2.467	2.472	2.472	2.472
G	2.029	2.049		2.039	2.034	2.037	2.035	2.038
H	2.964	2.984		2.973	2.971	2.973	2.972	2.973
I	0.913	0.933		.923	.923	.923	.923	.923
J	0.022	0.042		.032	.032	.032	.032	.032
K	0.090	0.110		.095	.095	.099	.099	.099
L								
M								
N								
O								
P								

Measured by:	DAS 40 9-89	Date:	15/08/25
Audited by:	DAS 14 9-89	Date:	15/08/25
Prototype Approval:		Date:	

Rev	Date	Change	Revised by	Approved
A	08.04.22	New Issue	KJ/JLM	

DART AEROSPACE LTD		Work Order:	135482
Description: Turning Detail for D2891-1		Part Number:	DSK076
Inspection Dwg: DSK076	Rev: A	Page 1 of 1	

FIRST ARTICLE INSPECTION DIMENSION SHEET

☒ First Article ☐ Prototype

				Record Actual Dimensions				
Dim	Min	Max	Go/No Go Gauge	11	12	3	4	5
Lathe Section								
A	2.274	2.279	2.1	2.275	2.276			
B	3.702	3.722		3.706	3.710			
C	2.564	2.584		2.570	2.572			
D	0.718	0.738		.725	.727			
E	0.090	0.110		.096	.098			
F	2.464	2.484		2.469	2.471			
G	2.029	2.049		2.037	2.038			
H	2.964	2.984		2.971	2.972			
I	0.913	0.933		.923	.923			
J	0.022	0.042		.032	.032			
K	0.090	0.110		.093	.098			
L								
M								
N								
O								
P								

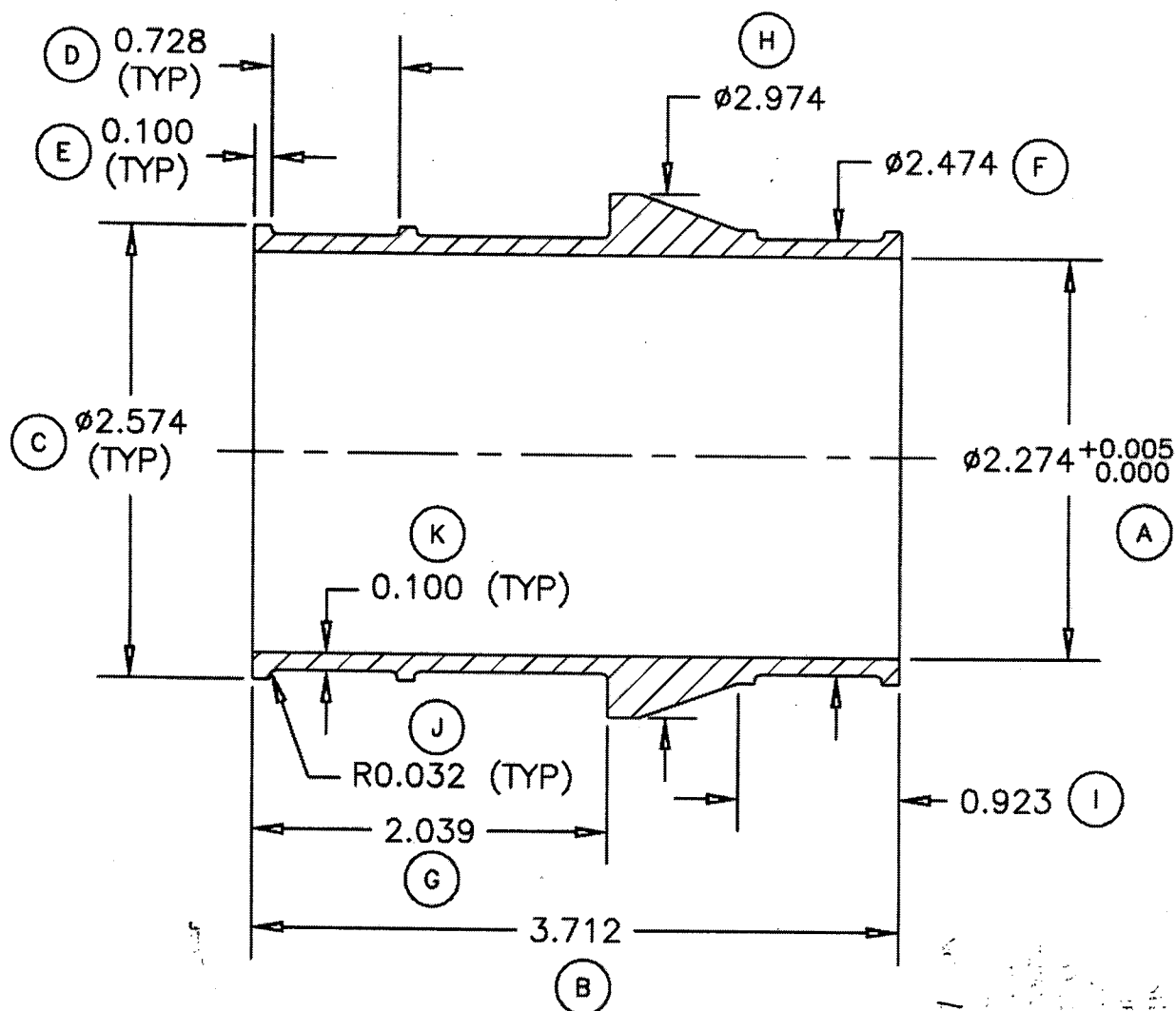
Measured by:	DAS 40 9-89	Date:	15/08/25
Audited by:	DAS 14 9-89	Date:	15/08/25
Prototype Approval:		Date:	

Rev	Date	Change	Revised by	Approved
A	08.04.22	New Issue	KJ/JLM	



DESIGN RT	DRAWN BY RT	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED [Signature]	APPROVED [Signature]	DRAWING NO. DSK 076	REV. A SHEET 1 OF 1
DATE 03.05.20		TITLE TURNING DETAIL FOR D2891-1	SCALE 1:1
A	03.05.20	NEW ISSUE	

RELEASED
0.07.01 [Signature]



D2891-1 TURNING DETAIL

135482 MGS
15-08-14
RECEIVED
15-08-14
135482 MGS
15-08-14

Copyright © 2003 by DART AEROSPACE LTD

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.